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MEMORANDUM

TO: Galina B. Chadwick
FROM: Diane E. Wehner *DEW 4-10-89*
SUBJECT: Wetlands Investigation: DuPont - Newport Site
DATE: April 10, 1989

The following are my comments on the Wetlands Investigation prepared on the sediment and surface water chemistry of wetland areas associated with the DuPont - Newport Site.

Sediment and surface water samples were collected from wetlands associated with the North and South Disposal areas at the site. Four sediment and three surface water samples were collected adjacent to the north site and five sediment and three surface water samples were collected at the south site. In addition, six sediment samples were collected from the Christina River, separating the North and South Disposal sites. Samples were analyzed for the complete Target Compound List (TCL) as well as a variety of physical parameters. The report did an excellent job in its discussion on the data collected vs. existing data on contaminants in the area and criteria on compounds identified as being of concern. Though no formal normalization of the sediment data based on differences in grain size analysis was performed, this parameter as well as other physical parameters analyzed in surface water and sediments have been adequately discussed in relationship to the data generated.

Elevated levels of zinc, cadmium, copper, nickel and chromium in wetland sediments have been identified as exceeding Federal Guideline Thresholds (guidelines established by EPA in 1985 for the evaluation of contaminant levels in sediments). Barium has also been identified in elevated levels though no federal guidelines or background levels were available for comparison. Zinc, lead and mercury were the compounds of concern identified in surface water associated with the wetlands, exceeding the chronic value for the EPA Ambient Water Quality Criteria for the Protection of Aquatic Life. Zinc, nickel, chromium, arsenic and lead levels were found to exceed Federal Guideline Thresholds in the Christina River sediments as well. Some of the levels though elevated, were considered within background levels.

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Though there is a marked trend for metal concentrations in river sediments to increase downstream of the site, no real conclusions were drawn relating the DuPont - Newport contaminant contribution to the Christina River. This is due to the river's complex hydrology and multiple potential sources of contaminants. Though the data presented in Figures 3 to 10 strongly suggest the site is actively contributing to the contaminant load in the Christina River, the report argues that any current transport of contaminants in wetland drainageways from the North and South Disposal areas appears negligible. The evidence cited to support this conclusion appears reasonable (lack of significant contamination in surface water samples, lack of erosion and transport of disposal site cover soils into wetlands due to the fine-grained texture of sediments, etc.) however, additional interpretation of Figures 3 to 10 may be warranted.

Though no additional surface water or sediment sampling is recommended in the report's conclusion, a judgment on the significance of the observed metal concentrations in both the wetland sediments and river sediments is awaiting the completion of planned biota tissue analyses and risk assessments. Because significant metal concentrations were identified in wetland and river sediments, the completion of some whole sediment (solid phase) toxicity tests may be necessary in order to determine the impact of the observed contamination on the aquatic community. The completion of these tests may also be useful to further investigate the fate and transport of contaminants from the North and South Disposal sites to the Christina River.

I have enjoyed commenting on this report and would welcome future opportunities to review progress on this project.

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cc: Joseph J. Hardman